Tho' by injurious foes borne down,
My fame, my toil, my hopes o'erthrown,
In one ill-fated hour.

When robb'd of what I held most dear,
My hands adorn'd the mournful bier,
Of her I lov'd so well;
What, when mute sorrow chain'd my tongue,
As o'er the sable hearse I hung,
Forbade the tide to swell?

'Twas Patience.....Goddess ever calm!
Oh! pour into my breast thy balm,
That antidote to pain;
Which flowing from thy nectar'd urn,
By chemistry divine can turn,
Our losses into gain.

When sick, and languishing in bed,
Sleep from my restless couch had fled,
(Sleep which e'en pain beguiles)
What taught me calmly to sustain,
A feverish being rack'd with pain,
And dress'd my looks in smiles?

'Twas Patience.... Heaven descended maid!
Implor'd, flew swiftly to my aid,
And lent her fostering breast;
Watch'd my sad hours with parent care,
Repell'd the approaches of despair,
And sooth'd my soul to rest.

Say, when dissever'd from his side,
My friend, protector, and my guide,
When my prophetic soul,
Anticipating all the storm,
Saw danger in its direst form,
What could my fear controul?

'Twas Patience..... Gentle goddess, hear!
Be ever to thy suppliant near,
Nor let one murmur rise;
Since still some mighty joys are given,
Dear to my soul the gifts of heaven,
The sweet domestic ties.

THE WEDDING-RING.

ANNETTE was milder than the dew,
That spangles Arno's scented grove,
And Lubin, constant, fond, and true,
As ever told the tale of love.

One eve, with chaste, yet mantling smile,
He bade her guess what he could bring,
Then, from a bosom void of guile,
He blush'd, and trembling took a ring.

The maiden fluttered, sidled, sigh'd,
Oh, Cupid, 'twas a charming scene,
And with affected coyness, cry'd,
Dear, what can such a trinket mean?

Mean! cry'd the youth, with glowing cheek,
And flurried that she so mistook;
A ring-dove dropt it from his beak,
I pick'd it up in yonder brook.

And much we owe, my lovely fair,
To this kind token of the dove,
Who dropt it for the purpose there,
A faithful emblem of our love.

It is of clearest gold refin'd,
Affection's chastest sigh, be sure,
And polish'd, like my Annette's mind,
As simple, elegant, and pure.

Its round too—what is that to prove,
To what can such an emblem tend?
What but th' eternity of love,
A love, like mine, that knows no end.

Annette, they say—nay in this curve
No sorcery lurks, nor lawless art,
That in this finger there's a nerve
Which leads directly to the heart.

Touch'd by this gold, for rapt'ur'd there
Love's charming witcheries are such,
Fancy would falter to declare
The thrilling pleasure—Shall I touch?

It struck her finger—rapt'ur'd quite
She cry'd—You're foolish, get you gone—
Yet, if the touch be such delight,
What happiness to put it on?

He seized the hint—the willing maid
Scarce knew what she had said or done,
But love's sweet influence obey'd,
And kiss'd the ring that made them ONE.

And now when rude or playful jest,
At happy wedlock had its fling,
She clasps her Lubin to her breast,
And smiling shews—her wedding-ring.

FOREIGN LITERATURE.

(Continuation of the Report of Mathematical Class of Institute.)

MR. SAGE has also wirtten a paper, and Messrs. Guyton and Vauquelin presented a report on the advantages and inconveniences of employing zinc in covering houses. The

section of chemistry, at the desire of the minister of the home department, has pointed out what are the manufactures that are injurious to those who dwell in their vicinity, and what are the measures proper to be employed, to reconcile the interests of the manufacturer with those of the public. Reports have likewise been made on Mr. Tarry's writing-ink, incapable of being effaced by acids or alkalis; on the artificial turquoises of M. de Sauriac, which promise a new source of wealth; and on the late M. Bacheliers, plaster for preserving stone. Of all these we hope soon to be able to lay before our readers a more particular account.

The department of mineralogy does not afford so rich a harvest this year, as it has done in some others. M. Guyton has made known a new crystaline form of the diamond. It is composed of two demi-speroids, united in a macle or twin crystal. He has shown also, that lead, like other metals, is rendered more dense by hammering, provided it be confined so as to be incapable of extension.

M. Sage has found, that the chrysolite of volcanoes reduced to powder, may be substituted for emery.

One of the most important objects in geology is no doubt that of fossil animals, and M. Cuvier has continued his researches respecting them. In concert with M. Brongniart, he has finished his mineralogical geography of the environs of Paris. He has also investigated the bony breccix on the coasts of the Mediterranean. These rocks, which are found at Gibraltar, near Terruel in Arragon, at Cette, Antibes, and Nice, in Corsica, on the coast of Dalmatia, and in the island of Cerigo, have been formed in fissures of compact limestone, which constitutes the principal substratum of these several places, and are all of similar composition. They consist of numerous pieces of bone, and fragments of the limestone in which they are included, connected together by a brick-coloured cement. They all belong to herbivorous animals, for the most part known, and similar to those still living in the same places: and they are mingled with fresh-water shells; which lead us to suppose, that their date is subsequent to the last residence of the sea on our continents; though very ancient with respect to us, since there are no indications of such breccix being formed in our days, and some of them, as those of Corsica, contain unknown animals.

Alluvial lands likewise contain bones of animals of the order of glires. Some have been found in the bogs in the valley of la Somme, with the horns of stags, and the heads of oxen; and in the environs of Azof, near the Black Sea. They belong to species of the beaver; some resembling those now in existence, and others of a much larger size. To this animal M. Fischer, who discovered the bones of it, has given the name of trogontherium.

Other bones of glires have been found in schists. Some of these species have been described; and M. Cuvier has seen the figure of one, which some have considered as belonging to a guineapig, others to a polecat, but he was unable to determine the genus.

Among the fossil bones of ruminants, M. Cuvier has recognized a species of elk different from that now existing. The remains of it have been collected in Ireland, in England, near the Rhine, and in the vicinity of Paris, in beds of marle of little depth, which appear to have been deposited in fresh water. Other horns discovered in abundance near Etampes in sand, underlying fresh-water limestone, prove the existence of a small species of reindeer, not now to be found. M.

Cuvier has likewise observed remains of the horns of the kid, deer, and stag, not essentially differing from the known species.

Among the fossils of ruminating animals with hollow horns, he has remarked skulls of the aurochs discovered on the banks of the Rhine and Vistula, in the vicinity of Cracon, in Holland, and in North America. These skulls indeed exceed in size those of the present wild ox, but this Mons. C. ascribe ssolely to the more plentiful pastu e the animal then enjoyed. There is another sort of fossil skulls, varying from those of our domestic oxen only in being larger, and having the horns differently directed. As the ancients distinguished two kinds of wild oxen, the *urus* and the *bison*, may we not conclude, that these belonged to one of the kinds, which, after having furnished our domestic breed, has become extinct in the savage state? while the other, not to be tamed, still subsists in very small numbers in the forests of Lithuania, alone.

Bones of horses and boars too have been found; the former almost always accompany those of elephants, and occur with those of mastodontes, tigers, hyenas, and others found in alluvial soils. In the strata of course, marine limestone on the banks of the Layon, near Angers, occur bones of an unknown species of manatee, with those of a large species of seal, and of a dolphin.

The fossil skeletons of three species of oviparous quadrupeds, persevered in calcareous schists, have likewise been examined by M. Cuvier. One of these, from Oeningen, on the right bank of the Rhine, has been described and figured as the skeleton of an antideluvian man. This Mons. C. has shown to have great analogy with the salamander, and to belong to the genus proteus. Another, from the same place, is of the toad kind, and approaches the bufo calamita. The most singular, from the quarries of Altmuhl, near Pappenheim, in Franconia, has no resemblance to any species now known. From the length of its neck and head, its long mouth armed with sharp teeth, and its long arms, Mons. C. infers, that it fed on insects, which it caught flying; and from the size of its orbits, it may be presumed to have had large eyes, and to have been a nocturnal animal.

Mons. C. has likewise published a supplement to his memoirs on the fossils of Montmartre, in which he has given a figure and description of an ornytholite, more perfect than any before published. It was probably of the gallinaceous order, and comes nearest to the common quail.

Mons. Sage has given a description of some carpolites, or fossil fruits. One was a kernel of a walnut, another apparently a nutmeg, both become limestone. The third was a fruit analogous to the durio transformed into jasper. From observations already made on carpolites, added to these, M. S. infers, that all the fossil fruits found in our climates, are exotic. He next enters into a chemical investigation of the means by which these petrifactions have been effected.

Mons. Jussieu has formed a new order of plants under the name of monimiæ. He composes it of the genera ruizia, monimia, ambora, and perhaps citrosma, pavonia, and antherosperma.

Mons. Palisot Beauvois has studied the organs of fructification in grasses with great attention, and thus been enabled to arrange the numerous species in more natural genera than had hitherto been done.

Mons. Labillardiere has made known to us a new plant of the family of palms, of which he has formed a genus under the name of ptychosperma, ap-

proaching to the elatas and arecas. It was discovered by him in New Ireland. It is frequently above sixty feet high, yet its stem is not more than two or three inches in diameter. Hence he has given it the name of gracilis. It is astonishing, as he observes, that so slender a tree should be able to stand; but in all the monocotyledons the hardest woody part is on the outside, and this structure renders them much stronger, than such trees as have their hardest part in the centre.

M. Lamouroux has presented to the class a very extensive work on marine plants, our knowledge of which was very confined. M. L. not only agrees in opinion with M. Correa, who places the organs of fructifications in the tubercles at the extremities of the ramifications of the sea-weeds, but has described with precision the different parts of these organs. He has likewise observed, that the algœ growing on granite, on limestone, and on sand, are always different from each other. M. Decandolle had found, that their interior was destitute of vessels, and formed entirely of a cellular texture: and Mons. L. distinguishes two kinds of cells; one hexagonal, and very long, forming the stalks, and the ribs of the ramification; the other hexagonal also, but with nearly equal sides, and constituting the membranous or foliaceous substance. Those of the former kind he supposes may be analogous to the vessels of more perfect plants. His investigation has led him to form several new genera in this family.

M. Mirbel has continued his researches on vegetable physiology. It has generally been admitted, that the albumen of seed served as nutriment to the young plant after germination; but this opinion required the support of positive observation; and M. Mirbel appears to have removed all doubt concerning it by an experiment equally simple and ingenious. The embryo in the seed of the onion, as it is unfolded, bends so as to form an elbow, which comes out of the ground, while the plumule and radical remain concealed in it. If a mark be made at this period on the two branches of the germ at equal heights, the spot nearest the radicle will rise alone, if the plant receive no aliment but from the ground. On the contrary, if it be nourished only by the albumen of the seed, the spot nearest the plumule will rise above the other. But if both the ground and the seed concur in the developement of the germe, the ascent of the spots will be nearly equal.

To this paper M. Mirbel has added some interesting observations on the germination of asparagus; and on the manner in which the leaves, at first sheathed like all those of the monocotyledons, become by the growth of the stalk, lateral and opposite, and afterward lateral and alternate.

In another paper M. Mirbel has examined afresh the germination of the water-lily. Botanists had entertained doubts respecting the two fleshy lobes, from between which it springs: these M. Mirbel shows to be cotyledons, and he concludes, that the nelumbium does not differ essentially from other plants of class.

M. Correa, though he considers the nelumbium as a dicotyledon, does not agree with M. Mirbel as to the nature of these lobes. He believes with Gaertner, that they have much analogy with the vitellus: and he compares them to the fleshy tubercles of the root of the orchis.

M. Poiteau has been investigating the germination of grasses. He has observed, that the radicle when it first unfolds itself, assumes the form of a cone, and represents the principal or taproot of other plants; but as soon as the lateral roots have ac-

quired a certain growth, this cone is obliterated and destroyed. As M. Poiteau has made the same observation on many other monocotyledonous plants, we may suppose, that this substitution of numerous and secondary roots for one principal root takes place, because each bundle of fibres in them has its particular root; which naturally reminds us of the observation of M. du Petit-Thouars on the growth of the dragon-tree.

The researches of M. Cuvier concerning fossil animals have generally led to discussions concerning the species admitted by naturalists, and have almost always produced observations tending to promote the science of zoology. Thus in this paper on the osteology of the manatee, considering the organization of the amphibious mammalia, he has been led to separate from the phocæ and morses, the Indian walrus, the manatee, and the species described by Steller. The three latter form one family, distinguished by the absence of the posterior extremities, and by herbivorous teeth. He reduces Buffon's four species of manatee to two, and gives accurate characters of these, which he admits in the different genera.

In another paper on the genus felis he gives the osteological characters of the heads of the principal species, and points out one not recognized by modern naturalists. To this he has given the name of leopard, which had become synonimous with panther, for want of a guide to its proper application. It differs from it by its smaller size, and more numerous spots.

M. Geoffray had long ago classed the simix without thumbs, which had before been confounded with the sapajous, in a distinct division, under the name of *ateles*. To these he has now added two species, which he has figured and described. One which he calls arachnoides, had been mentioned merely by Edwards and Brown: the other, which he names *encadrée* (framed,) is new. It is black with white hairs round the face.

He has also described two birds; one badly known, the other new. The latter has some resemblance to the corvus nudus and the corvus calvus; but according to M. Geoffray, they differ sufficiently to form three distinct genera, which he describes under the names of cephalopterus, for the new species; gymnoderus, for the corvus nudus; and gymnocephalus, for the corvus calvus. The cephalopterus is black; with a very high crest, which falls forward on the beak; and a kind of dewlap, also covered with feathers.

The second bird, which, as well as the preceding, is from Mexico, had been imperfectly described by Margrave under the name of cariama. From his description, M. Geoffray had considered it as approaching to the trumpeter: but now it is in the museum of natural history, he considers it as a separate genus, to which he gives the name of microdactylus.

The tortoises too have furnished Mr. G. with the subject of an interesting paper. When he was in Egypt, having noticed the tortoise of the Nile mentioned by Forskaol, he was led to form a separate genus of all the tortoises, which like it have the extremities of the ribs movable, and a soft shell. He names it trionix, and has added several new species to those already known. M. Brongniart, in his valuable work on reptiles, had classed these with his emydes; at the same time noticing the characters, that distinguish them from the other species of this genus, the shell of which is complete, and covered with scales. The large soft shelled tortoise of Bar-

tram Mr. G. ranks it in the genus chelys of M. Duméril.

In a work entitled a General Monography of Tortoises, M. Sweiger has accurately described about sixty species. It is accompanied with excellent figures, and a copious collection of synonimes.

The class of fishes too is enriched with many new species, by M. Risseau and M. Delaroche. It has been supposed, that fishes, as well as animals, had their peculiar climes: but Mr. R. whose researches were made in the gulf of Nice, has found in the Mediterranean fishes hitherto considered as peculiar to the East Indies, or to the Northern Ocean. Mr. D.'s inquiries have been turned to the depth at which each species of fish naturally lives, the modes of catching them, and the functions of their air-bladders.

Physiological experiments are no doubt those that require most leisure, and patience, yet M. von Humboldt made many very nice observations on the phenomena of animal life during his toilsome and dangerous travels. In a communication on the respiration of the sharpnosed crocodile, he has shown that this animal, notwithstanding the volume of its bronchiœ, and the structure of its pulmonary cells, suffers greatly when deprived of fresh air. It breathes very slowly. A young one, a foot long, absorbed only 12 cubic inches of oxygen in an hour and forty-three minutes.

Since his return to France, M. Von Humboldt, in conjunction with M. Provençal, has made various experiments on the respiration of fishes. It was demonstrated by Spallanzani and Sylvestre, that fishes do not decompose the water in which they breathe, as some had supposed, but abstract the oxygen dissolved in it, or procure oxygen directly from the atmosphere by rising to the surface. The experiments of Messrs. Von H. and P. have had farther objects. In one of them seven tenches were placed under a jar filled with river water, containing about 244 cubic inches, English measure. After living in it eight hours and half, it appeared from the analysis of the air still found in it, that these fishes had absorbed 8.85 cub. inches of oxygen, and 3.5 of nitrogen, and that 8 of carbonic acid gas had been produced. Hence they inferred, that a considerable portion of the oxygen was not converted into carbonic acid*. When fishes were kept in water deprived of air, they were uneasy, and fell motionless to the bottom in about twenty minutes. When it contained only pure oxygen, they appeared to breathe with eagerness, and expand their gills more. When nitrogen and hydrogen, they kept their gills closed, seemed to dread the contact of these gasses, and died in a short time. Carbonic acid killed them in a few minutes. But they do not absorb oxygen and nitrogen by their gills alone, for the whole surface of their bodies has the faculty of acting on these gasses. After the fishes were removed from the water containing the deleterous gasses, a small portion of carbonic acid was found in it, exhaled probably from their bodies.

M. Provençal also made some experiments on the respiration of different mammalia, after dividing the eighth pair of nerves. Their respiration did not appear to be affected immediately by the operation; but it soon became feebler, the animals gradually absorbed less oxygen, and

* This inference may be just: but we have no proof that the fishes did not retain a portion of carbonic acid; and it appears from subsequent experiments, that carbonic acid was given out by them when oxygen was not present. T.

produced less carbonic acid; and at length their respiration ceased, probably from the cessation of the mechanical action of the thorax. In proportion as the respiration diminished, so did the heat of the animal.

Several members of the class, Messrs. Duvenoy, Delaroche, von Humboldt, Provençal, and Cuvier, have made the air-bladder of fishes, with the functions of which we are not well acquainted, an object of their inquiries. In some fishes this vesicle has a duct communicating with the stomach. In some this duct is wanting, and a peculiar organ of a red colour, and laminated structure, is found. In others, both this organ and the duct occur; and in a few this bladder has its peculiar muscles. The air it contains is a mixture of oxygen and nitrogen, and the greater the depth in water at which the fish habitually lives, the more the oxygen predominates. The want of it does not appear to be detrimental to respiration, though it does to the production of carbonic acid. Tenches, after they have been deprived of it, swim, dive, and ascend in the water with as much ease as before.

Two young physicians, Drs Magendie and Delisle, have tried the effects of the poison of the upas of Java, on several animals, chiefly dogs. They all died in general convulsions, whether the poison were introduced by the blood-vessels or lymphatics, by an insertion into a wound, or injection into the intestines. It appeared to enter the system only by means of the circulation, and particulary to affect the spinal-marrow. It seemed to act but very indirectly on the brain, thus indicating the independence of the spinal marrow on this organ, not pointed out by dissections. M. Vauquelin, in the course of his experiments on belladonna, found, that its juice when swallowed by animals, produced in them a delirium exactly similar to that occassioned by opium. Its action on the nervous system was confirmed also by the experiments of Mons. Sage.

The effects of various gasses injected into the blood-vessels has been examined by Dr. Nysten. Atmospheric air, oxygen, nitrous oxid, carbonic acid, carbonic oxid, phosphoretted hydrogen, &c., were not deleterous. Oxymuriatic, ammoniacal, and nitrous acid gasses, acted apparently by a violent irritation of the right auricle and pulmonary ventricle. Sulphuretted hydrogen, nitric oxid, and nitrogen, diminished the contractile power of these parts. Some others* so changed the nature of the blood, that respiration was unable to convert it from venous to arterial.

M. Desessartz read a history of an epidemic disorder, which prevailed in three neighbouring villages at the same time. This epidemic, though originating from the same common causes, was so modified in the nature and violence of its symptoms, by the circumstances peculiar to the different villages, as to require important variations in the mode of treatment in each.

Mons. Sage presented some reflections on the means of remedying the sting of the weever, *trachinus dracho L.*, and a description of the effects of the poison of the tarantula, with the means employed to counteract them in Spain. Both these means consist in the external and internal use of the volatile alkali.

Mons. Tenon communicated three papers on practical surgery. In the first he showed, from numerous experiments on dogs, rabbits, and

* This indefinite expression, and the preceding, &c. are the faults of the French reporter. T.

sheep, that the denuded extremities of the long bones exfoliate after amputation, before the wound is cicatrized. In the second, he gives the history of a wound in the head, which required trepanning, and was 151 days before it was cured. The third was on ruptures. For the reduction of crural herniæ, Mons. T. recommends the patient to be laid on his back; an assistant, standing between his knees, to raise these as high as he can; and another holding the leg of the side affected, to turn the great toe inward, with the knee and thigh, as much as he can. In this position the intestine may be returned by gentle pressure.

Mons. Pelletan has imparted some interesting observations on aneurisms.

Mons. Larrey has pointed out the necessity of having recourse to amputation in cases of gangrene after gun-shot wounds, without waiting till a separation of the mortified part takes place.

The report of the committee on Mons. Yvart's work, entitled, Means of Improving Agriculture by Rotations of Green Crops, says, that it answers its important purpose of showing how land may be rendered constantly productive in the most profitable manner, without being exhausted.

Mons. de Cubiere read a paper on the cultivation of the bald cypress *(le cyprès-chauve)*, pointing out the advantages of this fine tree.

Mons. Leblanc, who has resided several years in America, strongly recommends the introduction of the vicugna into the Alps and Pyrenees.

Mons. Poyfere-de-Ceré gave an account of the mode in which the Spaniards wash their superfine wool.

Mons. Perey made some interesting observations on the manufacture of the jars and alearazas, which the Spaniards use for keeping liquors, and for cooling them.

DISCOVERIES AND IMPROVEMENTS IN ARTS, MANUFACTURES, &c.

Specification of the patent granted to James Parker, of Northfleet, in the County of Kent, gentleman; for a Cement or Terras to be used in aquatic and other buildings, and stucco-work.

TO all to whom these presents shall come, &c. Now KNOW YE, that in compliance with the said proviso, I the said James Parker, in pursuance of, and compliance with, the said proviso in the said recited letters patent contained, do, by this present instrument, declare that the principle and nature of the said invention and the manner in which the same is to be performed, is described and ascertained as follows; that is to say: The principle and nature of the said invention consists in reducing to powder certain stones or argillaceous productions, called nodules of clay, and using that powder with water, so as to form a mortar or cement stronger and harder than any mortar or cement now prepared by artificial means. I do not know of any precise general term for these nodules of clay, but I mean by them certain stones of clay, or concretions of clay, containing veins of calcareous matter, having frequently, but not always, water in the centre; the cavity of which is covered